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FIRST

ANNUAL REPORT

OF THE

ENGINEER AND DIRECTORS

OF THE

WESTERN VERMONT RAILROAD.

1851.

Not in 1851

NEW-YORK:

GEORGE F. NESBITT & CO., STATIONERS AND PRINTERS, TONTINE BUILDING,
CORNER OF WALL AND WATER STREETS.

1851.

TO THE
PRESIDENT AND DIRECTORS
OF THE
WESTERN VERMONT RAILROAD.

GENTLEMEN :—

IN compliance with your instructions, the survey of the Western Vermont Railroad was commenced in May last, and after a careful and thorough examination of the various lines, the road was located and prepared for contract in the month of September.

LOCATION OF THE LINE.

The line commences at the south end of the depôt grounds of the Rutland and Burlington road, at the village of Rutland, a distance of sixty-seven miles south from Burlington. From this point the line is located through the valley of Otter Creek, passing through the towns of Rutland, Clarendon, Wallingford, Danby, Mount Tabor and Dorset, a distance of twenty-five miles, to the summit between Otter Creek and the Batten-

kill. Thence through the valley of the Battenkill, passing through the towns of Dorset, Manchester, Sunderland and Arlington, a distance of forty miles south of Rutland. Thence through Shaftsbury and the north part of Bennington to the State line, a distance of fifty-three and nine-tenths miles from Rutland. At this point the line connects with the Troy and Boston Railroad, thirty miles distant from Troy, the present terminus of the Hudson River Railroad. The valleys of Otter Creek and the Battenkill, through which the line is located, have a favorable direction for the line of road, and the section of country through which the line is located, presents for the entire distance a uniform and favorable surface for the construction of a road, without encountering any difficult and expensive work. One of the most important considerations in determining the final location of the southern portion of the line, was to select such a route as would make the line of the Western Vermont road the shortest feasible route between Rutland (the northern terminus) and the Hudson River. The line as located passes through a section of country that will furnish a large amount of business to the road; a business capable of supporting the road independent of the trade and travel that must be received from roads north. In consequence of the favorable location, and the connections it has with roads north and south, the line of the Western Vermont road must form an important link in the chain of roads extending from New-York to Montreal, a distance of 380 miles. It possesses the advantage of opening, by the shortest feasible route,

a communication between the valley of the Hudson and the Rutland and Burlington road. It will therefore become an important avenue for the business of Western and Northern Vermont, the line of the Ogdensburg road, and the road now extending to Montreal. Another important consideration is, that it is a valley route its entire length, avoiding the heavy and expensive work that has been overcome by other roads in reaching the valley of Western and Northern Vermont.

The Western Vermont road will open, by the most direct channel, access to a section of country rich in mineral and agricultural wealth. The mineral products upon the immediate line that now reach the Northern Canal, and thence to the Valley of the Hudson, will furnish a large business to the road, and a large proportion of all the freight from the Rutland and Burlington road, destined for the Valley of the Hudson, will, of necessity, pass over the Western Vermont road; as the transportation over the line of *any other road will be subject to the additional charge of Canal toll whenever carried within any part of the State of New-York.* Any feasible line that can be found west of the Valleys of Otter Creek and the Battenkill, connecting the Rutland and Burlington road with the Valley of the Hudson, must, from the geographical position of the country, be *located parallel with and near to the line of the Northern Canal,* and without the advantage of reaching the Valley of the Hudson by as short a line as can be had, *via* the route of the Western Vermont road.

One of the most important considerations presented in favor

of the construction of a road across the Green Mountains was the importance of securing "to Boston the business and trade of the Valleys of Otter Creek and the Battenkill, a section of country fertile almost beyond parallel, in explored and unexplored mineral resources." A large portion of the mineral wealth referred to, lies along the line, and near the northern terminus of the Western Vermont road. The ability of the Western Vermont road to share largely in this important trade, will appear evident from the fact, that, by the equated railroad distance, the distance from Rutland to New-York is forty-six miles less than the distance from Rutland to Boston. This simple fact is introduced to show that the business at present carried over the mountain, will, by the construction of the Western Vermont road, find its way to "New-York, its ancient and established market;" while the Western Vermont road will, in return, furnish to the Rutland road a new business, that is of necessity compelled to seek other channels.

The character of the grades and curves upon the Western Vermont road, will compare favorably with the first class of railroads in the country.

The average grade from Rutland to the State line is	19 feet per mile.
Average grade of the Ogdensburg Road, - - -	21 " " "
" " " Montreal and Vermont Junction	
Railway is - - - -	6 " " "
" " of Rutland extension from Burlington	
to Canada line (will not exceed) -	19 " " "
" " from Burlington to Rutland, - -	17 " " "
" " Rutland to Bellows' Falls, - -	42 " " "
" " " Cheshire Road, - - - -	44 " " "

CURVES ON THE WESTERN VERMONT ROAD.

75	per cent.	straight line,
18	"	" curved line from 2,865 to 5,730 feet radius,
7	"	" " " 1,432 to 2,292 " "

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In addition to the Maine line, a branch has been located from North Bennington, to Bennington, length $4\frac{1}{2}$ miles. The importance to the road, of giving to Bennington facilities for the accommodation of the large amount of business that will be received at that point, rendered it necessary, and for the interest of the road, that a branch should be constructed. The project of extending the Harlem Railroad, and the Pittsfield and North Adams road to Bennington will, if carried into effect, unite with the Branch at Bennington, and furnish a direct north and south line with the Western Vermont road.

By an order of the Board, the road from Rutland to Bennington was placed under contract the second day of October, 1850.

The grading and masonry from Rutland south, twenty-three miles, was let to Messrs. James & Charles Collins; the grading and masonry of the succeeding fifteen miles, to H. Henry Baxter, Esq.; and the grading and masonry of the line to North Bennington, including the Branch, making eighteen and a half miles to Messrs. Brown, Reed & Co.

The workmanship of all the bridges upon the line, has been let to Messrs. Thatcher, Stone & Maxwell; all of the bridges to be constructed on the plan of "How's Improved Patent."

The corporation have secured the services of contractors well known as to their ability, to carry the work forward to successful completion.

The work from Rutland south, twenty-three miles, is to be graded, and prepared for the reception of the superstructure, by the first day of September, 1851, and the remaining portion of the line, to be completed by the first of October, 1851.

Soon after the letting, the several contractors commenced active operations at all of the heaviest points upon the line. Since then the work has progressed satisfactorily. No question can arise in relation to the ability of the contractors to perform every part of the work at as early a day as called for by contract; the heaviest section, of one mile in length, (and one that will require the most time,) will not exceed 89,000 cubic yards of earth excavation. The largest amount of rock excavation on any section, will not exceed 7,000 cubic yards.

The following estimate of the cost of grading, masonry, and bridging, is based upon contracts made for all of the work; and we have every indication, from the nature of the work, that the contractors will be able to carry the work forward to completion within the estimates placed upon it. A large portion of the grading consists of light embankments, from two to four feet in height, and the material, taken from the sides to form the embankment, is composed mostly of pure sand and gravel, a material that will form a good, durable road bed, on at least seven-eighths of the whole line.

ESTIMATE OF GRADING, MASONRY, AND BRIDGING.

1,818,100 Cubic Yards of Earth Excavation, - - -	\$245,982 25
2,350 " " " Loose Rock Excavation, - - -	1,175 00
26,020 " " " Solid Rock " - - -	20,816 00
6,376 " " " Bridge Masonry, - - -	30,286 00
6,785 " " " Culvert Masonry, - - -	18,658 75
369 " " " Arch Masonry, - - -	2,727 50
1,970 " " " Bank Wall, - - -	2,462 25
Foundations for Masonry, - - -	3,000 00
2,034 lineal feet Bridging - - -	28,476 00
Total cost of 58 3-10 miles, including Branch, or \$6,060 90 per mile. - - -	\$353,583 75

The Land damage has been settled, upon nearly the entire line, by private negotiation. We may therefore safely assume the cost of the

Right of Way, including Land necessary for Depôts, Way Stations, &c. \$40,000	
Fencing, as per contracts, - - - - -	27,849
Total cost of Land damages and Fencing - - - - -	\$67,840

ESTIMATED COST OF ONE MILE OF SUPERSTRUCTURE.

Iron Rails, 60 lbs. to the yard—95 tons, at \$40, - - - - -	\$3,800
10,000 lbs. Cast Iron Chairs, at 2½ cts., - - - - -	275
4,500 lbs. Spikes, at 5 cts., - - - - -	225
2,200 Ties, at 25 cts. each, - - - - -	550
Distributing Materials, - - - - -	100
Laying Track, Straightening and Fitting Rails, - - - - -	350
Total cost of one mile of Track - - - - -	\$5,300

SUMMARY OF ESTIMATE.

Cost of Grading, Masonry and Bridging, - - - - -	\$353,583 75
" Land damage and Fencing, - - - - -	67,840 00
65 miles Superstructure, including Turnouts, - - - - -	344,500 00
Depôts and Engine Houses, - - - - -	20,000 00
Way Stations and Water Tanks - - - - -	18,000 00
Machine Shop, - - - - -	8,000 00
2 Turn Tables, - - - - -	2,500 00
40 Road Signs, - - - - -	1,200 00
Engineering and Superintendence, - - - - -	18,000 00
Total cost, exclusive of Equipage, - - - - -	\$833,623 75

ROAD FURNITURE.

Five 18 ton Engines, - - - - -	\$32,500 00
Five 22 " " - - - - -	35,000 00
Six long Passenger Cars, - - - - -	12,000 00
Three " Baggage " - - - - -	2,400 00
One hundred 8 Wheel Freight and Platform Cars, - - - - -	65,000 00
Six Hand Cars, - - - - -	600 00
One Snow Plow, - - - - -	500 00
Twenty Gravel Cars, - - - - -	6,000 00
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	\$154,000 00
Estimated cost of Road, - - - - -	833,023 75
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Which gives the cost of the Road complete, - - - - -	\$987,023 75
Or \$16,911 per mile.	

W. B. GILBERT,
Chief Engineer.

Engineer's Office,
Bennington, Vt., Jan. 7, 1851.

REPORT

OF THE

DIRECTORS.

THE Directors of the Western Vermont Railroad Company submit to the public the annexed report of Col. Wm. B. Gilbert, their Chief Engineer, on the *feasibility, cost and prospects* of their road, together with a map by the same gentleman, drawn with great care, and showing at a glance the entire line of the road, together with its connection north with the Rutland and Burlington, and south with the Troy and Boston railroads, together with such suggestions as occur to them.

In forming an opinion as to the *feasibility* of the road, it is only necessary to look at the map and contract estimates, of the amount of grading, masonry and bridging to be done, the line in its entire length being in the valley west of the Green Mountains, and upon a soil remarkably adapted to the construction of a good road bed, and having in its immediate vicinity nearly all the materials necessary for the work.

The *cost* of the work, as will be seen on examination of the report, is less, we think, than that of any other railroad in New-England, and this notwithstanding the comparatively

large estimate for road furniture, or rolling stock ; the whole estimated expense per mile being less than \$17,000, including land and water, wood-houses and way stations, machine shops and car-houses, together with all other fixtures, and furnitures necessary for a road doing a large freight and travel business. And here we will remark, that so much progress is already made in the work as, in a great measure, to test the correctness of Mr. Gilbert's estimates of the expense of the grading, and masonry, through the whole line ; and, from present indications, his estimates of the amount of the work, and its expense, will prove in the end to have been correctly made.

As to our *prospects*, we feel a strong assurance of success in our work, and this not only in the quality, and character of our railroad, but that it will be completed and running in less than fourteen months from the time when the first gravel was moved on it.

As a paying stock, too, we have the fullest confidence in our road. On examination of the report referred to, it will be found not only that we are to have a good road at a less cost than is usual, but that *ours is the "Western Vermont road,"* commanding the entire business from Rutland, southerly, in the Otter Creek and Battenkill Valleys ; and being *shorter than any other that is or can be made* from Rutland to the navigable waters of the Hudson at Troy or Albany, it will, of course, constitute a part of the main truck line between New-York and Montreal. Our connection at Bennington with the Troy and Boston, and virtually with the Hudson River Railroad Com-

pany, (for, by the recent arrangement made by the Company last named, they are to run their cars to Troy,) will furnish to our road all the facility for obtaining southern business that we could desire; while our connection at Rutland, with the Rutland and Burlington Road, on the completion of the Rutland and Burlington extension to Swanton, and the Vermont and Montreal Junction Railroad, from Swanton to Montreal, will answer for us all the purposes of a most favorable connection north; and it being the intention of the several companies which are to compose this line so to construct and manage their roads, as that they shall be run in the shortest time, we confidently expect the whole line from New-York to Montreal, will be run in twelve to fourteen hours; thereby securing to their line a large portion of the New-York and Montreal traffic and travel, and its full proportion of the entire Canada and Atlantic business.

It is well said in the report that the amount of way business will be very large on our road, and its friends confidently expect, that the amount of way travel, together with the large amount of way freight now going to market, but which will be greatly increased by the increased facility for doing business which railroads supply, will make the stock a paying one; and that the immense amount of marble, iron, and other heavy mineral freights, together with the rich agricultural products of this section, which will necessarily seek a market through this channel, will well justify the building of the road. But in addition to the local business, when we take into account the result,

which are to follow the opening of the entire line, we may well count on the *success* of our enterprise in the ultimate *value* of our stock.

The financial condition of our company, and its means of prosecuting, and completing so desirable a work, is the only subject upon which further remark is deemed necessary. From the low rates of our contracts, as specified in the report, for the grading, masonry, and bridging, as well as for land damages, fencing, &c., it will be seen that the Directors of this road have adopted the money basis, or cash value principle, in their work thus far; and, believing that much of the financial embarrassment experienced by railroad companies, and more of the losses of stockholders, in the depreciation of their stock, has resulted from the practice of contractors building roads for stock only, or nearly all in stock, and at prices which ruin the value of such stocks as an investment forever, we design to continue, in all our subsequent acts, to adhere to the same principle which has guided us thus far—*Cash prices*.

The capital stock of the company, by charter, is \$1,000,000; and although our stock subscriptions are large, and increasing almost daily, yet, for the purpose of furnishing our iron, and to insure the completion and furnishing of the road at the earliest day practicable, and in time to meet our engagements with connecting roads, which, at the longest, must be by the 1st day of December next; our Board have determined to issue the bonds of the company: therefore our Directors, in January last, resolved to issue their 7 per cent. bonds for not exceeding

\$400,000, which, with the interest semi-annually, from the 1st day of January, 1851, shall be payable at the Mechanics' Bank, New-York, to Shepherd Knapp and George Briggs, Esqrs., in trust, and to secure the payments of said bonds; and they caused to be executed a deed of mortgage of the entire railroad and its franchises, to said Trustees for the benefit of the bond-holders.

The expense of the construction of the whole work, so far as the grading, masonry, bridging, lands and fences, is already amply provided for in the stock subscriptions, along the line of the road; and with the subscriptions making from time to time to our Stock, and the avails of our bonds, for the purchase of iron, &c., we are enabled to give the strongest assurance, both personally and officially, that our work will be done, and well done, by or before December next; and that the only debt on our road will be these Mortgage Bonds.

MYRON CLARK,	} <i>Directors.</i>
ROBINSON HALL,	
A. R. VAIL,	
IRA COCHRAN,	
M. C. DEMING,	
P. L. ROBINSON,	
A. P. LYMAN,	
SOLOMON FOOT,	
LEMUEL BOTTOM,	}

Dated at Manchester, the 7th day of January, 1851.